

NEWTON

SERIES™

S100 MultiPole™ Surround Speakers

User Manual



INTRODUCTION

Thanks for choosing a Newton Series surround loudspeaker. The S100 features the finest drivers, precision internal crossover circuitry and an elegant enclosure design.

The Product Development Team at Cambridge SoundWorks believes there is no better combination of audiophile-level attention to detail and reasonable cost.

AFTER UNPACKING

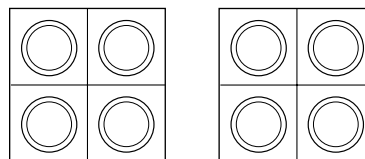
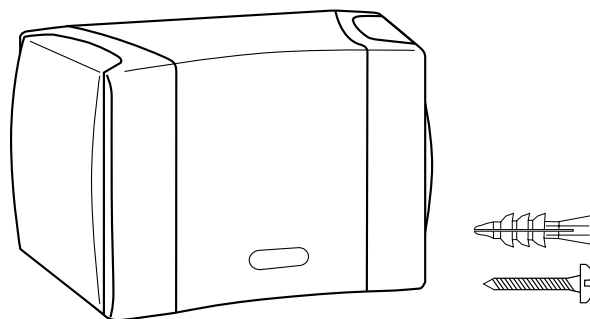
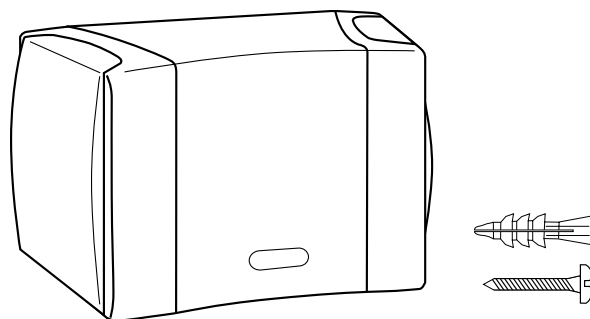
Store the shipping carton and packing material for future use and transport.

CONTENTS

1. Two loudspeakers
2. Two No.10 screws and plastic wall anchors
3. Eight rubber feet

INSPECTING FOR DAMAGE

Examine the speaker system carefully for shipping damage. If there is any, do not install or use the system. Return the speaker to the store where you made the purchase or call Cambridge SoundWorks at 1-800 FOR-HIFI (1-800-367-4434) for assistance.



POSITIONING YOUR SPEAKERS

The following suggestions assume you have some flexibility regarding where you place your speakers. Don't be too concerned if your situation and listening environment dictate the speakers' position. As long as each surround speaker is on the left or right half of the listening space, the speakers will provide convincing, lifelike sound.

Mounting: The typical way to position surround speakers is to wall-mount them on a protruding screwhead. Other methods are to place them on short shelves, to mount them on short swivel brackets, or to install them on floor stands.

Notice: The speakers are marked LEFT and RIGHT. Most often, the speakers will be wall-mounted with the MultiPole switch panel facing down. In this case, mount the LEFT speaker on the listener's left side and the RIGHT speaker on the listener's right side (see diagram A).

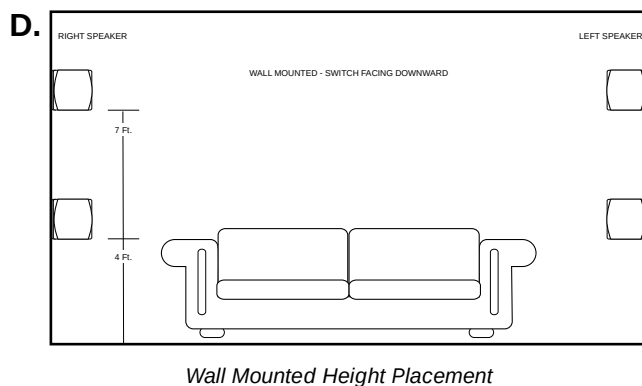
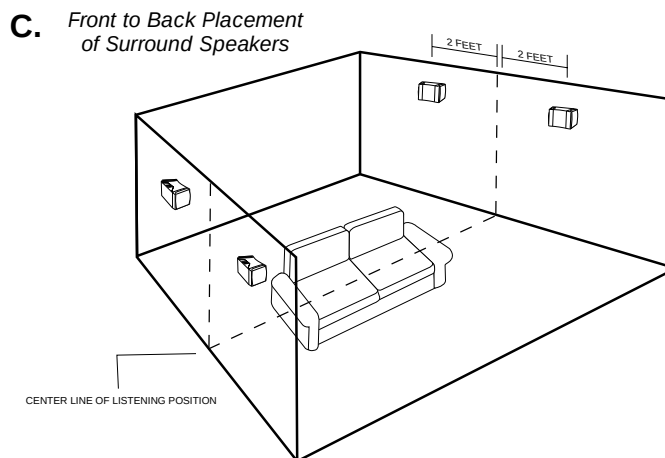
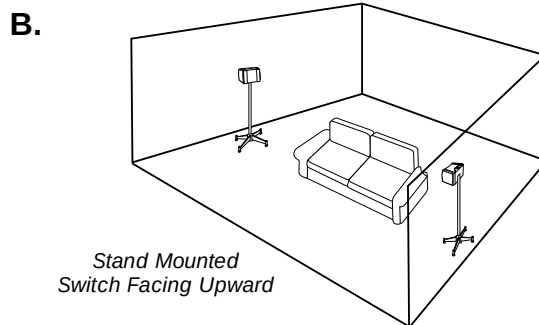
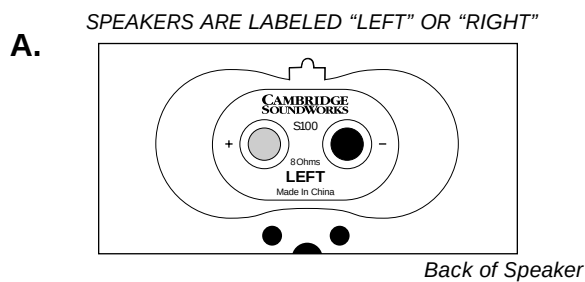
You may need to invert the speakers to provide access to the MultiPole switch (such as when placing them on small support shelves or floor stands). In this case, reverse the speakers' left/right positions (see diagram B).

Front to Back placement: Place each surround speaker to the left or right of the listening area. Try to position the speakers within two feet of a line centered on your listening position (see diagram C).

Height: Place each speaker at least four feet above the floor, up to seven feet above the floor (see diagram D).

Note: It is not critical that the left and right speakers be the same distance from the front speakers or equal heights.

If you don't have walls on both sides of your listening area, try to avoid placing both surround speakers on a wall behind the listening position. Sonically, it's still better to place one speaker on a side wall and one speaker on a rear wall. This provides better separation than two speakers on a wall behind the listeners.

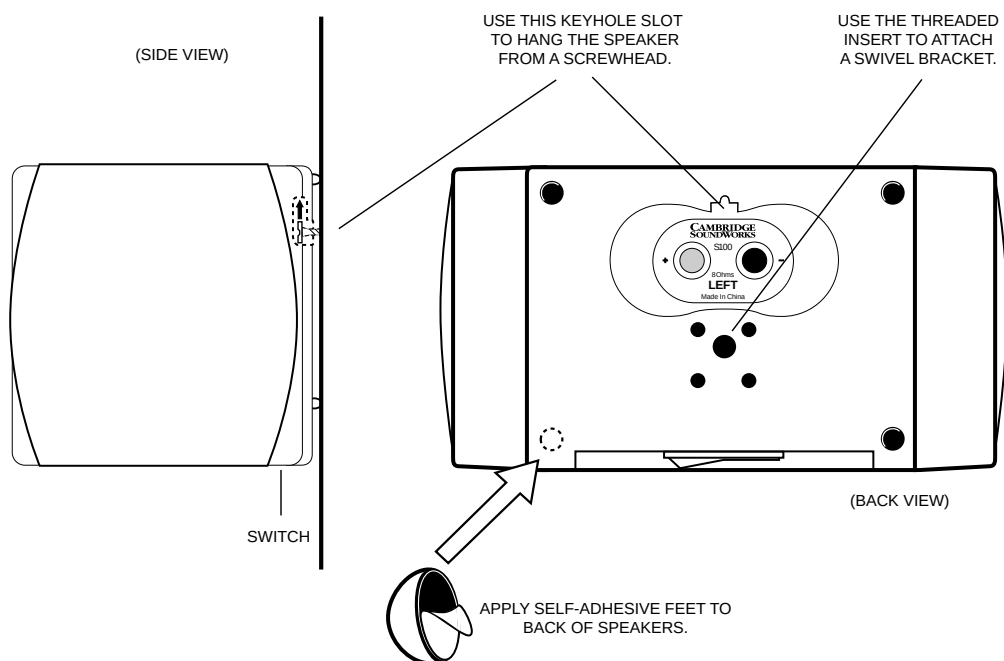


SPEAKER MOUNTING

Hang the S100 directly on a wall:

Install a No.10 screw in the wall so that its screwhead protrudes about 3/8 inch. Cambridge SoundWorks supplies screws and plastic anchors for your convenience, but it is the installer's responsibility to insure the screw is securely mounted.

Apply the soft, self-adhesive feet to back of the speakers. The feet protect the finish of the speakers or the surface and improve stability if the surface is not perfectly flat.



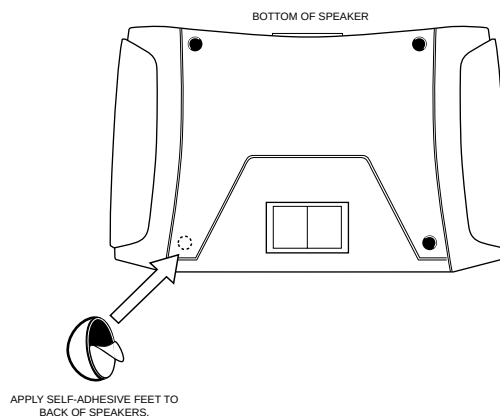
A small, purpose-built shelf can be used instead of hanging the speakers from a screwhead. In this case, we recommend you apply the soft, self-adhesive feet to bottom of the enclosures. The feet protect the finish of the speakers or the surface and improve stability if the surface is not perfectly flat. Apply the feet to the surface of the speaker opposite the MultiPole switch, in the pattern shown.

Using The Speakers On A Stand

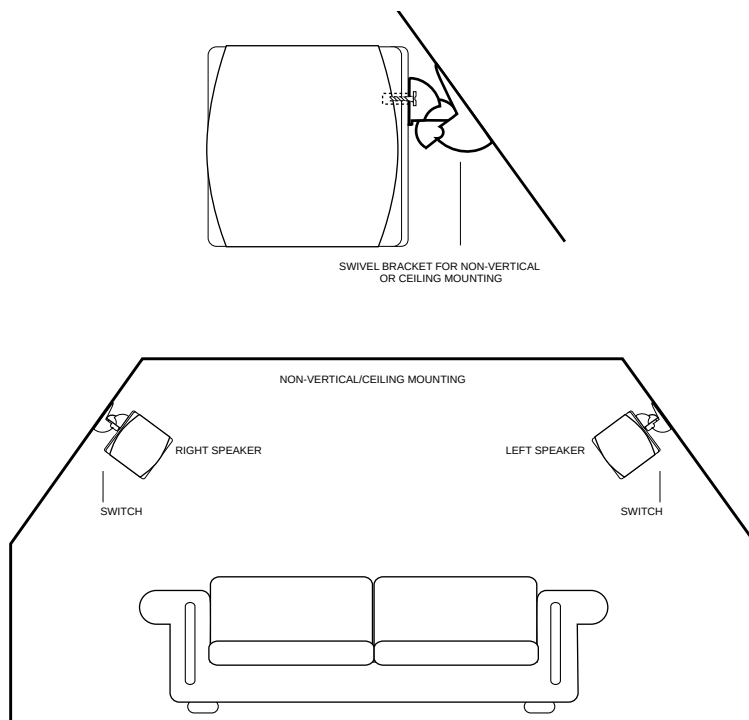
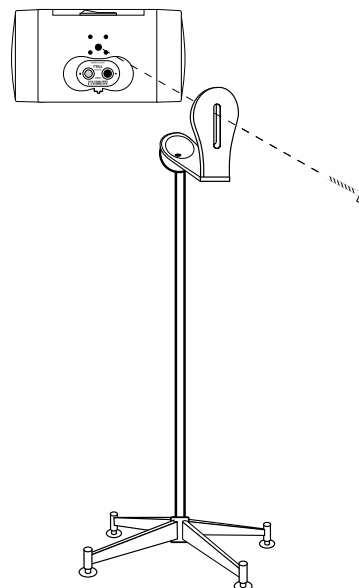
Cambridge SoundWorks Model ST300 floor-stands may be used for the S100.

The speakers mount to the stand with the MultiPole switch on top. For this reason, the positions of the speaker should be reversed (the speaker marked left should be placed on the listener's right side and vice versa).

Mount the surround speaker to a stand by screwing the stand's fastener into the surround speaker's threaded insert.



ATTACHING SPEAKER TO STAND



Swivel-brackets (available separately) can be used to attach the surround speakers to a wall that isn't vertical, or to the ceiling.

About MultiPole Technology

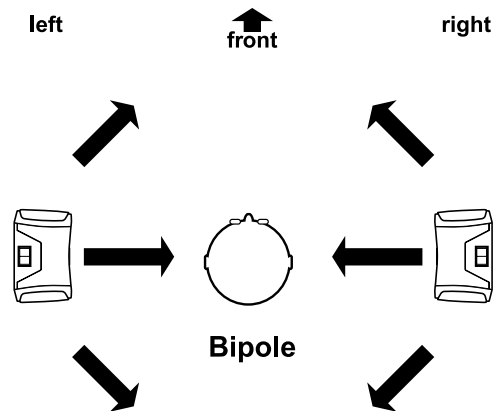
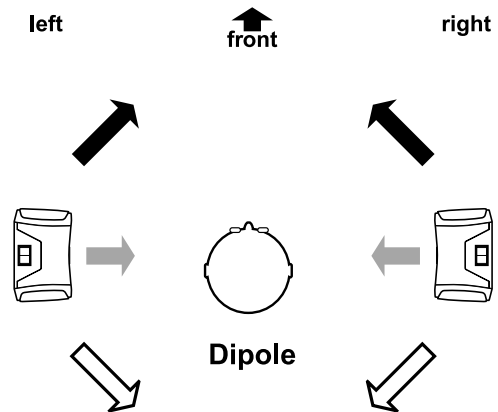
The MultiPole capability of your S100 speakers lets you enjoy different types of surround programs at their best. The descriptions that follow assume you will position your surround speakers to the left and right of the listening area and not directly behind it.

Dipole Mode: This mode provides everyone in the listening space with enveloping surround. Most sound is projected sideways (to the front and rear of the room), while little is directed at the listeners (see Dipole in the **MultiPole Modes** diagram). As a result, the sound is well mixed with room reflections, following longer paths. In Dipole mode, a listener can be closer to one surround speaker than the other and still hear both surround speakers. This characteristic makes it ideal for smaller rooms, where a listener may be closer to one surround speaker than the other.

Dipole mode is ideal for use with synthesized surround decoding modes; the choices on your decoder labeled "Hall," "Theater," "Church," or similar names. Also, use it for Dolby Surround programs (the predecessor to Dolby Digital and the format supported by stereo TV programs with surround encoding). Dolby Surround has a monaural surround channel which is split between the two surround speakers. Dipole mode's dispersion pattern prevents this channel from "collapsing" towards the closer surround speaker.

Bipole Mode: This mode "fills in the middle" compared to Dipole mode. Each surround speaker projects approximately equal amounts of sound to the sides and at the listening area (see Bipole in the **MultiPole Modes** diagram). This makes it easier to hear effects occurring *between* the left and right surround speakers. Dolby Digital's separate left and right rear channels make this possible. The more Dolby Digital program material you listen to, the more you will benefit from Bipole mode. In larger listening spaces, Bipole mode can even rival Dipole mode on non-Dolby Digital program sources.

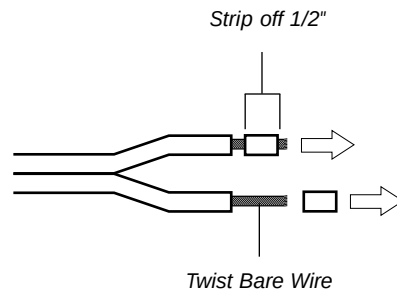
MultiPole Modes



PREPARE THE SPEAKER WIRE

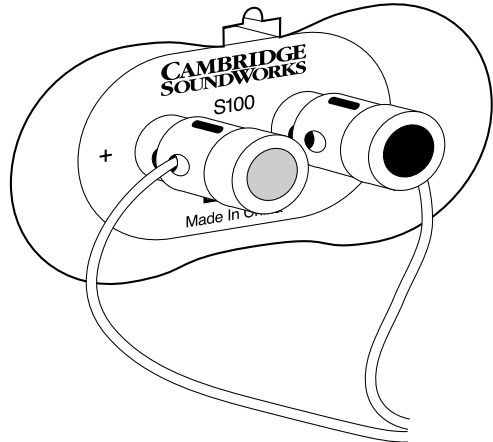
Use at least 18 gauge speaker cable for short runs (under 15 feet). Use 16 gauge or heavier speaker cable for longer runs.

1. Determine how long the speaker cable should be for each speaker. Cut the speaker cable into the appropriate lengths.
2. Strip 1/2 inch of insulation from the two individual conductors in the speaker cable. Twist the exposed strands of bare wire together
3. Attach any connector plugs (like banana plugs) at this time.
4. Determine which conductor you will use to connect the positive terminals of the amplifier and speaker together. One of the two conductors of a speaker cable can usually be distinguished by printing or a ridge on the insulation. Some times the metal of the conductors has two different colors.



Make The Connections:

1. Press the speaker's red and black connector knobs to expose the holes in their shafts.
2. Insert the stripped end of one cable's "indicated" conductor into the speaker's red (+) connector. Release the knob to secure the connection. Make sure no stray strands of wire are exposed.
3. Repeat the procedure for the cable's other conductor and the speaker's black (-) connector
4. Connect the other speaker cable's conductors to the other speaker.
5. Connect the opposite ends of the speaker cable to the speaker outputs of your receiver. Remember to observe channel and polarity (Left Positive, Left Negative, Right Positive, Right Negative).



Speaker Size Setting in Dolby Digital Decoders

The S100 includes an internal high-pass network that prevents it from responding to low-frequency signals below its operation range.

When connecting either speaker to a Dolby Digital decoder, set the decoders rear channel size setting to **SMALL**. If there is a crossover frequency choice, set at 100 Hz or higher.

SPECIFICATIONS

Dimensions: 4 5/16"H x 7 7/8"W x 4 5/16"D

Weight: 3 pounds each

The S100 can be safely used with any surround receiver rated above 25 watts per channel. There is little advantage gained in using more power than 100 watts per surround channel, but amplifiers above this power rating can be used so long as the receiver is not operated at distorted levels.

Warning About Excessive Amplifier Distortion

Operating a receiver (of any power rating) beyond its maximum undistorted output level creates distortion—added high-frequency sound not part of the musical program. Distortion dramatically increases the internal operating temperature of a loudspeaker and will eventually cause the speaker's failure due to burned or melted internal parts. While Cambridge SoundWorks includes the most heat-tolerant parts commensurate with good acoustic design, the speaker's Limited Warranty against defects in materials or workmanship does not apply to parts that fail from long-term operation at very high temperatures

Enclosure Cleaning

The speaker enclosures can be cleaned with a window-cleaning product. Use a soft, lint-free cloth only. Avoid spraying any cleaner on the grille panels.

Brush or vacuum the grille panels if dust accumulates on them.

